

## Notice of Allowability

Application No.

10/772,790

Examiner

Albert T. Chou

Applicant(s)

KIM ET AL.

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on 8 October 2007.
2. ☒ The allowed claim(s) is/are 1-47.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

**DETAILED ACTION**

**EXAMINER'S AMENDMENT**

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

The application has been amended as follows:

- Claim 45 has been amended as shown in the ATTACHMENT (one page).

***Allowable Subject Matter***

2. Claims 1-47 are allowed.

***Reasons for Allowance***

3. The following is an examiner's statement of reasons for allowance.

The prior art does not teach or fairly suggest the following:

A method for detecting data in a wireless communication system; the method comprising:

receiving a plurality of communication signals;

modeling a solution for estimating data of the received communication signals using a linear system requiring a matrix inversion;

determining columns or rows of an approximate Cholesky factor; determining a difference between the determined columns or rows;

if the determined difference is less than a threshold, determining subsequent columns or rows by repeating previously determined columns or rows;

estimating the data of the received communication signals using the approximate Cholesky factor; and

using the data estimate to detect data received on a plurality of received communications channels, as specified in claims 1 and 24.

A wireless communication apparatus configured to receive a plurality of communication signals comprising:

a data estimation component configured to estimate data of the received communication signals using a linear system requiring a matrix inversion and an approximate Cholesky factor;

a processing component configured to determine columns or rows of the approximate Cholesky factor;

said processing component configured to determine a first block of a new column or row after determining a non-replicated prior column or row; and

said processing component configured to determine a difference between the first block of the new column or row and a corresponding first block of the prior determined column or row and, if the determined difference is less than a threshold, to

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determine subsequent blocks of the new column or row by replication of corresponding blocks of the prior determined column, as specified in claims 12, 18, 25, 46 and 47.

The closest prior art, either singularly or in combination, fails to anticipate or render the above limitations obvious.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert T. Chou whose telephone number is 571-272-6045. The examiner can normally be reached on 8:30 - 17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H. Pham, can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Albert T. Chou  
October 23, 2007

Ac

  
CHI PHAM  
SUPERVISORY PATENT EXAMINER

10/31/07

**ATTACHMENT**

45. The wireless communication apparatus of claim 35 wherein said processing component is configured to determine a difference by determining an error between normalized blocks of the columns or rows.